(note to public involvement workshop participants: This material is provided in response to a question in Workshop #1 about how new loads are charged for the costs of serving them. Specifically, which costs they pay up-front at the time of hook-up and which they pay over time in their electricity rates. This is a background information paper only. City Light does not yet have a position or a proposal for implementing any of these options.)

DRAFT

Distribution System Expansion
How to Pay For It, Build the Right Amount, and Minimize the Risk of Stranded Investment

Background

In 2000, there was concern over expected rapid increases in City Light load and the need for large investments in distribution infrastructure that would be necessary to serve that load. As a result of this, Seattle City Council Ordinance 120111 was adopted October 9, 2000. This ordinance stated that New Large Load customers would reimburse the City Light Department for costs associated with distribution lines and substation capacity. New Large Load customers were defined as customers greater than 12.5 MVA or 10 average MW. The utility established up-front "capacity charges" for substation and feeder capacity for new customers fitting the definition of New Large Load. These charges represented the estimated cost per kW of a generic substation and feeder that was assumed to be needed to provide the capacity to serve the new customer. A proposal was made, but not adopted, to extend this up-front fee to all new customers of any size.

At the time there was expected to be rapid economic growth in the service area because of fast-growing computer-related and biotechnology industries, resulting in several "New Large Loads" and other large loads that would require new distribution infrastructure. The concern was that City Light would have difficulty financing the additional capacity needed for load growth and providing energy to meet the additional load, especially in light of the sharp increases in energy costs that electric utilities were facing at that time. This expected load growth did not materialize, and a capacity charge was not adopted for smaller customers.

Today, there is renewed interest in capacity charges and the general question of how to finance distribution infrastructure. Redevelopment of the South Lake Union area could lead to significant load growth. The City is promoting economic growth in this area, and there are plans for new biotechnology and medical research facilities. Seattle City Light may have to invest in new and upgraded feeders, substation expansion, and new substations in South Lake Union and Interbay areas. City and private development in the area may require City Light expenses for relocating feeders and undergrounding. At the same time, there are concerns about City Light's debt, and calls to reduce debt by the Mayor, City Council, and the City Light Advisory Board.

Definition of "Capacity Charge"

For purposes of this paper, a "capacity charge" is defined as a fee billed to new or enlarged customers to cover all or part of the capital cost of providing feeder and substation capacity to serve them. This fee would be assessed before the customer is connected to the electrical grid, and would be based on the kVA of installed transformer capacity. The charge would be assessed whether or not City Light is investing in feeder or substation capacity to serve this particular customer. Other up-front fees are charged to new customers also, but they are not part of "capacity charges" as discussed in this paper. Examples of those other charges are

installation charges and charges for above-standard distribution facilities such as dual feeders and undergrounding. Those charges are already part of City Light policy for all new customers.

For purposes of this paper, a "new customer" is defined as a building or other facility that is being connected to the electrical system for the first time. If ownership of a facility transferred from one "customer" to another, a capacity charge would not be assessed. But, if an existing customer built a new facility in another location, this would be considered a "new customer" and a capacity charge would be assessed. An "enlarged customer" would be one that requested and received an upgrade in their transformer capacity. In that case, the capacity charge would be assessed on the difference between the old and new transformer capacity.

The Issues

Discussion around capacity charges focuses on three issues:

- How will Seattle City Light finance distribution system expansion?
- How can City Light create incentives for new customers to provide accurate requests for capacity needs, thus avoiding overbuilding caused by building too much capacity for those customers?
- How can City Light reduce the risk of underutilized or stranded investment?

A capacity charge could provide part of the answer to all of these questions. However, there are other ways to address these issues, and some of them are discussed in this paper.

How to Pay For It

Distribution system expansion could be financed in at least three different ways.

- City Light borrows part of the cost, and customers pay part through current rates. All customers pay for all costs over time.
- New customers pay a capacity charge to cover the full cost or a portion of the cost of substation and feeder capacity up-front. City Light does not borrow for the feeder and substation capacity needed to serve new customers.
- New customers pay for their transformer capacity, in addition to current installation costs. All customers pay for other distribution costs in rates over time.

Building the Right Amount and Minimizing Stranded Investment

The second and third issues are closely related, but are not the same. For example, with a capacity charge, the cost of feeder and substation capacity would be paid by the customer up-front, so the risk to City Light of stranded investment in distribution facilities would be reduced, even if customers requested more capacity than they need. Still, overbuilding would have occurred. On the other hand, even if all customers estimate capacity needs accurately there can be stranded investment if City Light overestimates the number or size of customers that will be in a given area in the future. City Light must build distribution infrastructure ahead of forecasted load and if it doesn't materialize there will be stranded investment.

The two related goals, helping customers make good capacity investments and reducing stranded investment, can be addressed at least partially with several different options.

- Using information about transformer size and the billing records of a sample of customers that were "new" six-ten years ago, City Light could determine whether customers routinely over-estimate capacity needs. If that is found to be the case, Seattle City Light could take a more proactive role when new customers are determining their capacity needs. Utility engineers could estimate the capacity needs of the new building, using square footage and end use information. Then customers would be required to demonstrate why their capacity needs would be greater.

- New customers could pay a capacity charge, perhaps resulting in better estimates of capacity costs and shifting the risk of stranded costs to the customer.
- Paying for transformers as part of Installation Charges would provide funds up-front for capital needs and shift the risk of stranded transformer capacity to customers. It might also provide incentive for more reasonable capacity requests.
- A contract demand charge for new customers could be established. Customers would contract for a certain amount of capacity. Their monthly bills would include energy charges and a charge for the kW of contracted demand or actual demand, whichever is higher. This might induce customers to limit capacity requests to realistic amounts, which could help reduce overbuilding of transformer capacity.
- A Performance Bond or Deposit covering all distribution capacity requirements would protect the utility from stranded investment in distribution system expansion.

The Options

In this section, the options mentioned above will be discussed. The advantages and disadvantages of the options for addressing the issues of concern will be outlined.

Current Practice: Financing with Debt and Current Rates
City Light's current policy is to finance distribution system expansion by paying for it partly from debt and partly from current rates. All customers, existing and new, pay rates that include a portion to pay the debt service on past distribution investments and a portion to pay for new construction that will be needed in the future. Likewise, customers from the past have paid rates that included portions for past—and future—distribution system investment. Thus, over the lifetime of a "customer" (house, office building, factory, etc.), rates paid will "even out" (more or less) so that all customers pay for approximately their share of distribution capacity over the period of time that they are using that capacity. To demonstrate this claim, a calculation was made to determine the amount that a hypothetical new 1 MW customer with a 70% load factor would pay over time from the portion of rates that covers distribution costs. This customer would pay a present value of $1.3 million over a 25-year period. An up-front capacity charge would bring in only $150,000 from a customer with a 90% power factor. Of course, current rates also cover distribution O&M and the capital cost of replacement, rehabilitation, and the capital cost of transformers and other distribution components that are not proposed to be included in a capacity charge. If City Light adopted a capacity charge, the ongoing rates of new customers would still cover those distribution costs.

This has worked well so far in City Light's history, and it's the method most public electric utilities use to finance all capital costs. The concern at this time is that City Light's debt ratio (the ratio of long-term debt to total capitalization) has risen sharply over the past several years as a result of the 2000-2001 energy crisis. Lowering the debt ratio has become a priority in order to provide the Department the flexibility to deal with needs that might arise in the period following 2011, when the current Bonneville contract expires. A capacity charge would make it possible to borrow less than would otherwise be needed.

It should be pointed out that City Light's ability to issue additional debt to fund capital requirements is not at issue here. Even at the height of the energy crisis, City Light was able to access credit markets with large short-term and long-term debt issues. With its investment-grade bond ratings, City Light should be able to borrow additional funds at favorable rates in the immediate future. However, while the bond market may have been willing to accept a large increase in City Light's debt ratio as a necessary short-term response to the energy crisis, a persistently high debt ratio could lead to deterioration in City Light's credit worthiness.

The City Light Advisory Board recommendations, endorsed by the Mayor, included a recommendation to reduce debt to 50-60% of total capital by 2011. The Board also recommended that City Light maintain a $100

million contingency fund along with a minimum operating cash balance of $30 million. These policies ensure that a larger portion of new capital construction will be financed out of current income, with less borrowing. The policies will reduce City Light's debt ratio over time, with or without capacity charges. Financial policies could be adopted to limit the percent of capital spending to be financed from borrowing, if this were found to be necessary. These policies will lead to a reduction in the debt ratio over time, and will maintain or improve City Light's access to capital markets and ability to finance distribution system expansion.

Advantages:

- Financing capital programs partially from debt and partially from current rates does not introduce serious inequity between new and existing customers.
- New customers pay for the distribution capacity they need over the time they are using the capacity. The distribution portion of rates brings in a present value over 25 years of about $1.3 million per MW. This compares to revenue of $150,000 per MW from a capacity charge for a customer with a 90% power factor. A combination of borrowing and current rates provides all the funds needed for distribution expansion.
- This method of funding distribution expansion would not discourage economic development and the City's ability to attract new businesses.

Disadvantages

- This option would provide no incentive for new customers to estimate their capacity needs more accurately.
- This option leaves the risk of stranded distribution system investment with the utility.
- This option requires borrowing to cover a portion of current capital costs.

Capacity Charge

Alternatively, borrowing could be reduced by assessing new customers up-front for the distribution capacity they will use over the lifetime of the facility. This would provide part of the money needed for the capital program, and borrowing and/or rates could be reduced somewhat. It's important to realize that borrowing could not be eliminated entirely. Money that is borrowed is used for many purposes besides feeder and substation construction and expansion. Parts of the existing distribution system are rehabilitated and upgraded each year, and there are other capital needs for generation, transmission, and general plant.

In early 2001, City Light Distribution staff estimated that capacity charges of about $639/kVA in the network area and $134/kVA outside the network area would cover the cost of constructing or expanding substation and feeder capacity.[1] A 2002 study[2] estimated that capacity charges for all new customers would result in annual revenue of about $55 million. This estimate was based on kVA added during 2001, at the height of the dot.com boom. In addition to connections at the 2001 level, the assumption was made that one 10 MW+ customer would be connected each year. Most likely, estimates of annual kVA added would be lower today. Of the estimated $55 million, $33 million would come from customers 1 MW or larger and $27 million would come from downtown network customers, who would face much higher capacity charges than non-network customers would. (There is overlap between the 1 MW+ customers and the network customers, of course.)

Several options for extending the capacity charge to new customers under 10 MW were presented in a 2001 paper.[3] Options include extending it only to new customers 1 MW and over; or to all new nonresidential customers; or to all new customers, including residential. Customers under 10 MW could be charged 100% of the capacity charge, or some smaller percentage. For more detail about these options, see the cited paper.

[1] Seattle City Light Issues Brief, "System Capacity Charge Revenue." April 24, 2002.

[2] Laschober, Paula J., "Estimate of Potential Revenue from System Capacity Charges." Draft April 2002 (corrected).

[3] Soder, Jane, "Capacity Charges for New Customers Smaller than 10 MW: Policy Options." April 2001.

Under current policy, new customers' rates are the same as those for other customers in the same class. These rates include a portion to pay debt service on past borrowing to pay for distribution system infrastructure that was built for old customers, and another portion to pay for current distribution capital construction that will be used by both old and new customers. If City Light began charging up-front for distribution capacity, the rates for customers that paid the cost up-front should be reduced below those of other customers in their class. They should no longer have to pay anything for the distribution capacity built and used by customers that did not pay a capacity charge. This would require that City Light establish new rate classes for new customers. If capacity charges were assessed on all customers, that would mean doubling the number of rate classes we currently have. This would be possible to do, but administratively costly. There would need to be substantial changes to the billing systems. There would be an increase in the work of calculating revenue requirements, cost of service and cost allocation and ratesetting.

City Light wants to build the right amount of distribution system infrastructure to serve customer needs. Building too little affects reliability, and building too much is costly to all our customers. Substations need a long lead time to build, and must be started long before new customers even apply for permits. Feeder capacity must be in place and sized large enough before new customers can be connected. Building new feeders or relocating existing ones also requires lead time; and must be planned before new customers' exact capacity requests are known. So establishing Capacity Charges will not help City Light plan for feeder or substation needs. Capacity Charges will not reduce City Light's stranded investment costs when distribution capacity is built, and then not needed because development is less than expected. However, Capacity Charges may provide incentive for customers to make more accurate (lower) estimates of their capacity needs, and that could result in better decisions on transformer sizing. This is not certain, though, because neither City Light nor customers want to undersize transformers. In a new building, even near-term needs are uncertain, and allowance must be made for growth.

Even though their value as an incentive for more accurate estimates of capacity needs is limited, capacity charges would transfer some of the risk of stranded investment from City Light to the new customer. If a customer over-estimated its capacity needs, it would still pay for the total capacity built or reserved for it. If a customer went bankrupt and the building remained empty, City Light would have already collected the cost of the feeder and substation capacity installed for that new customer.

Advantages:

- A capacity charge would provide the most funds up-front for the capital program without borrowing. .
- A capacity charge would reduce City Light's risk of stranded distribution investment by transferring some of this risk to new customers. Even if City Light overbuilt feeder and substation capacity, customers that connected to the system and then didn't produce the expected load would have already paid for that capacity.
- A capacity charge might induce customers to estimate capacity needs more realistically. This would help reduce over-sizing transformers for specific customers.

Disadvantages:

- Revenue estimates made in 2002 may no longer be valid. These estimates were based on the number of new connections in the dot-com boom era, and also assumed one new 10 MW+ customer annually. To get a picture of the revenue that might materialize from development in a particular area, consider that if a full capacity charge had been assessed for connections beginning in January 2003, and were applied to all projects listed on the South Lake Union Key Decision Points Timeline[4], less than $7.5 million would be

[4] Chuck Peterson and David Docter, "South Lake Union Key Decision Points Timeline," April 6, 2004.

collected through 2007. This includes assessments on all projects that have been completed, are under construction, or are planned for the future.

- Since construction of a new substation requires a long lead time, it must be planned and construction begun long before new customers appear and make capacity estimates. Expansion of existing substations and feeder construction and reconfiguration require less lead time, but still must be planned before the facilities expected to use them begin construction. This means that a capacity charge would not help City Light plan distribution system expansion.
- Establishing a capacity charge would result in serious inequity between existing and new customers. New customers would, in effect, pay for their substation and feeder capacity twice, once in the capacity charge and once in their monthly rates over time. This inequity could be reduced (but not eliminated) by establishing new, lower rate schedules for new customers, but adding rate schedules and classes is a costly administrative task for City Light.
- Because customers' cost of borrowing is higher than City Light's cost of borrowing, financing distribution expansion with capacity charges results in a higher total cost to the City Light service area than financing it through City Light current revenue and debt.
- A capacity charge is being discussed because of the perceived need for expansion of distribution system capacity created by expected development in specific areas, such as South Lake Union and the Interbay area. Yet, with the exception of reconductoring feeders out of Broad Street substation, little of the potential project cost, such as for the Interbay Substation and the South Lake Union Substation, that would be needed to serve these expected new customers has been included in the capital improvement plan. Potential developers in these areas might have strong objections to paying up-front for capacity expansion that is not yet or only partially planned.
- Capacity charges could have a dampening effect on economic growth. Establishing capacity charges seems to be counter-productive to the Mayor's push for development in certain areas such as South Lake Union and Interbay. None of our neighboring utilities have capacity charges and, other things equal, that would give the neighboring communities a small advantage in attracting new businesses and industries.

Including the Capital Cost of Transformers and Network Protectors in Installation Charges

City Light's Installation Charges assess all new customers for the costs of service installations at the time of connection to the system. These charges cover all labor costs of connection and all materials costs except for transformers. Installation Charges could be increased to cover the capital cost of transformers and network protectors as well. Then, customers could be given the "transformer investment" discount, for all kW *used.* Customers would *pay* for the kW supplied by the transformer they requested, and receive the discount for all kW *used.* Since larger transformers cost more, customers might have an incentive to improve estimates of capacity needs. And even if they didn't, the stranded costs of unused transformer capacity would be shifted from City Light to the customer.

When Installation Charges were first established in about 1982, the cost of transformers and network protectors was intentionally excluded because of the possibility that customers would want to purchase their own transformers, and would choose lower-priced transformers of lower quality. These lower-quality transformers could blow out more frequently, causing outages on the City Light system, which the utility would have to repair.

The author recently had a discussion with Dave Smith, now Director of South Electric Service and in 1982 an engineer involved with development of the Installation Charges policy.[5] Dave now believes that if the capital cost of transformers were included in Installation Charges, City Light could put requirements on customer-

[5] Telephone conversation with Dave Smith, Director, South Electric Services, April 27, 2004.

owned transformers that would ensure customer-owned equipment was as good quality as City Light's. If these requirements were put in place, concerns about effects on reliability would be eased.

Advantages:
- Funds would be raised up-front to cover the capital cost of transformers.
- Customers would have an incentive to estimate capacity requirements accurately, to avoid paying for too much transformer capacity. Overbuilding of transformer capacity would be reduced.
- The risk of stranded investment in transformers would be shifted to the customer.
- Giving new customers the transformer investment discount in the monthly rates would eliminate the inequity between existing and new customers.

Disadvantages:
- No funds would be raised to finance feeder and substation expansion.
- Including transformers in Installation Charges would not help City Light with substation or feeder capacity planning. It would not prevent overbuilding of these facilities.
- There could be problems with reliability if customers were allowed to purchase their own transformers.
- Currently, customers that receive the transformer discount are billed using a special computer system that is used primarily for customers on the Large and High Demand rate schedules. The transformer discount cannot be handled by the Banner system. New customers receiving the transformer discount would have to be billed on this system also. Adding a large number of new customers to this billing system would require additional IT staff time and quite possibly additional billing personnel.

Performance Bond or Cash Deposit

Several utilities require new customers to post performance bonds or make deposits to cover all or part of the cost of distribution system enhancements necessary to meet their capacity requirements. The new customer's bond is released or deposit returned as capacity utilization grows. Typically, a deposit is fully refunded once a customer's demand grows to a specified percentage of transformer capacity. If demand does not reach that level within an agreed-upon time, none or only part of the deposit is refunded.

This policy would go a long way toward protecting a utility from stranded investment in the distribution system, without great inequity between old and new customers. The deposit or bond could be large enough to cover the feeder and substation capacity needs of the customer, and would provide an incentive for them to estimate capacity needs realistically. If load did not develop as expected, or if the customer went out of business in the early months or years of operation, City Light could use the deposit or bond proceeds for capital programs.

A deposit or bond would not provide funds up-front to use in construction of the customer's distribution capacity. These funds would only be available if the customer failed to reach the projected level of demand within the time period specified.

Advantages:
- A performance bond or cash deposit might induce new customers to estimate capacity requirements more accurately. Lower capacity requests would reduce the amount of the bond or deposit proportionately.
- A performance bond or cash deposit does not cause serious equity issues between existing and new customers. If load develops as expected, new customers would have their deposits returned or the bonds released.
- A performance bond or cash deposit would protect City Light from much of the risk of stranded investment in distribution capacity. If the customer's load did not emerge, proceeds from the bond or deposit could be used by City Light for capital programs.

Disadvantages:

- A performance bond or cash deposit would not provide funds for capital programs, unless the expected load did not develop. Even then, the funds would not be available at the time the load was connected.
- A bond or deposit would not help City Light with substation or feeder capacity planning. It would not prevent overbuilding.
- City Light EMSD staff works with new customers in the months after a facility comes on line to identify conservation measures that have not been included in building design. A bond or deposit might discourage new customers from participating in City Light conservation programs after the building comes on-line. Any measures that reduce energy use would reduce demand, and would make it more difficult for the customer to reach the level of demand needed to get the refund.

Contract Demand Charge

Another way to reduce the risk of stranded investment in distribution facilities would be to establish a contract demand charge for new customers. Customers would contract for a certain amount of capacity, based on the size of the transformer they request. Their monthly bills would include energy charges and a demand charge for the kW of contracted demand or actual demand, whichever is higher. Knowing that they were going to have to pay for the capacity needs they requested over the life of the contract might induce customers to limit capacity requests to realistic amounts. This could help prevent overbuilding for transformer capacity, and would shift stranded costs of unused transformer capacity from City Light to customers, as long as the customer stayed in business. If City Light's planning for new or reconductored feeders began after new customers had contracted for their transformer capacity needs, a contract demand might help City Light plan new or reconductored feeders that were more accurately sized and located to meet customer needs. Since investment decisions for substations must be made well ahead of when customers appear, a contract demand would not help in substation planning. It would not provide funds up-front for distribution system expansion.

Advantages:

- A contract demand charge could provide incentive for customers to estimate capacity requirements more accurately.
- A contract demand charge would shift some of the risk of underutilized transformer capacity from City Light to the customer.
- If a contract demand charge were coupled with a performance bond or cash deposit, there would be less temptation to "spike" demand in order to get the bond or deposit returned.

Disadvantages:

- A contract demand charge would not provide funds up-front for capital expansion.
- A contract demand charge would discourage customers from adopting conservation or load reduction measures after the facility came on-line.
- A contract demand charge would require changes in the billing system that might be difficult and costly.

Exhibit: Capacity Charges, Seattle City Light and Other Utilities

Exhibit

Capacity Charges
Seattle City Light and Other Utilities

Features/ Utilities	SCL- New Large Loads	SCL- All New Customers	Utility 1	Utility 2	Utility 3	Utility 4
Description of Policies	Up-front payment for all feeder and sub capacity. Ongoing-use market rates.	Installation chgs, line extension chgs, construct. chgs, under-ground chgs.	Connection charges	Line extension charges, service drop charges	Installation charges and line extension charges.	Capacity revenue requirement "Buydown" Also 5+MW pay for onsite sub.
When began	Oct. 2000	Years ago	Years ago	Some yrs. ago	Some yrs. ago	2002
Purpose	Recover costs of distrib. capacity; reduce stranded investment	Recover costs of connection and costs above standard	Recover connection costs, including undergrounding	Recover part of connection costs & any new lines	Pay for part of connection costs	Prevent subsidy of new large customers by other customers
Customers to which it applies	12.5 MVa+	All new customers	All new customers	All new customers	All new customers	3+ MW. 5+MW for onsite sub.
Amount of charge	$134/kVa non-network; $638/kVa network	Actual or estimated cost; standard fees for small customers	Engineering cost estimate	Svc. drop-full cost. Line exten: full cost, less margin allow-ance based on expected revenue	Actual cost. Line extension: when addl. customers are added to line, proportional refunds.	Set by comparing cost of distrib. with expected rate revenue. 5+MW: cost of onsite sub.
Charge covers:	Above-standard costs, feeders, substations	Above-standard costs, T-former install costs, connect. costs, undergrounding, line exten, dual feeders.	Undrgrndng, line extension, meters, above - standard costs, transformers over 500 kVa	Part of service drop, line extension, Sub, if dedicated, above-standard costs	Cost of line extension, cost of service connection	Onsite sub for 5 MW+: actual costs of distrib. enhancements for customer.
Collect when, how?	As constructed	At energization	Up-front	Up-front	Up-front or letter of credit	Up-front
Use of $	Capital program	Capital program	Pays part of cost of connection	Pays part of cost of connection	Pays part of specific investment	Pays part of specific investment
Success?	2 customers. Neither built out or paid full	All new customers pay	All new customers pay	Applied to many customers	Applied to many customers	Has been applied to 3 customers
Comments	New customers may divide load to avoid 12.5 MVa threshhold	Transformer installation costs included, but not cost of T-former	Very similar to SCL's construction and installation chgs.	Very similar to SCL's construction and installation chgs.	Appears similar to SCL's construction charges	Complex admin. Charge depends on location in service area

Exhibit

Capacity Charges
Seattle City Light and Other Utilities

Features/ Utilities	Utility 5	Utility 6	Utility 7	Utility 8	Utility 9	Utility 10
Description of Policies	Up-front "load increase/develop-ment fee"	Deposit or bond for in-frastructure improvement	Up-front charge based on kVA x .8 (loading factor) x .6 (diversity factor)	**PROPOSAL** for upfront capacity chg for hi-density facilities	Contract demand chg. For 70% of requested capacity	Letter of credit or bond, which depreciates 1/30th per yr.
When began	1970s	Spring 2003	15 years ago	Proposal only; rejected	3 years ago	In last few years
Purpose	New cust. pay for system growth. Reduce stranded investment. $$ up-front for distrib. sys.	Encourage realistic load requests & miti-gate utility's losses	Pay for CIP	Cash for infra-structure, reduce utility's risk of stranded investment	Incentive for accurate capacity requests. Reduce stranded costs	Protection from stranded investment
Application Threshhold	10 kVA+	4 MW+	All new customers	20 watts/sq. ft. or more	500kW+	High-density loads, not defined
Amount of charge	$85/kVA contract kVA	No charge. Bond or deposit.	$115/kVA; Standard fee for small customers	?	No up-front chg. Contract demand chg. monthly	Cost of req. dist. capac, less cost of standard
Charge covers:	Feeders. If 13.5 MVa+ capacity-- dedicated sub. Pay actual costs of sub.	50% of costs of invest to serve peak	Share-costs of capacity from transformer to generation	?	Potential stranded cost	Extra cost of distribution required for hi-density loads
Collect when?	Before construction	Up-front deposit or bond	Before meter set	Up-front	Over time, in monthly bills;	If hi-density use ends w/in 30 yrs., utility collects from bond.
Use of $	Special fund for capacity additions	Refund after 18 mo. if pk is 90%+. Ref. part if pk is 50-90%	CIP fund	Refunded if customer uses 90% of installed capacity.	Collected monthly in regular bills. No special fund.	Deposit refunded at 1/30 per yr.
Success?	Many requests stopped before paying fee	No customers yet.	Helps size panels; may discourage econ. development	Proposal only	Considered a success. Applied to hundreds of customers	Has not been applied to any customers
Comments	10kVA. No SF Res. Covers many apts and sm. bsns. Like SCL proposal.	Refund, so not intended to cover costs.	Too low to cover power plants.	Proposal only; rejected by regulatory commission.	No $$ up front Take-or-pay energy contract would be similar.	Not intended to cover costs, but to reduce risk of stranded investment.